

Inaugural Dissertation

on

Tetanus

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Amherst College

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Tetanus may be defined an involuntary and almost constant contraction of all or many of the muscles, while the senses remain perfect and entire. It is divided into two species, the symptomatic and idiopathic, the former being induced by wounds or other lesions of the solids, the latter by exposure to cold and other noxious causes. My nosologists and practical writers Tetanic complaints have been distinguished into *Ophthalmicus*, *Empysematous* and *Tremens*, but as only marking different grades of the same disease, little need be said of these distinctions.

Rarely is there an affection that assails the human system in which the Pathology has been more unsuccessfully attempted than in Tetanus. Thus baffled at the outset, practitioners have hitherto directed their attention almost exclusively to an individual symptom, namely, the spasmodic contractions. Hence the inordinate use of opium, ether, the warm bath and every remedy calculated to repress action in the living fibre. The inability of these remedies alone, we would think, should induce practitioners no longer to repose confidence in their efficacy.

Considering almost the whole of the muscular structure is involved in Tetanus, we are almost entirely led to refer its seat to the source of motion powers. It will be shown in the course of the following dissertation, that the morbid appearances presenting themselves in Tetanus, in those subjects who have been examined after death, tend to substantiate this conclusion.

Within a very few years we have been presented with an essay on this disease by Robert Reid M.D. He classes it with diseases incidental to the spinal system. Before entering into its investigation he lays before us a general view of the principles upon which the classification itself is founded. I conceive it unnecessary to enter into the details of this author, though I have perused them with interest and instruction. It will be sufficient that I give the general outlines of his classification endeavouring to make the subject as compendious as the nature will admit.

Upon inspecting the anatomical structure of man, we observe the nerves distributed into three grand natural divisions. The first supplying the organic viscera of the Thorax and abdomen, which from its peculiar formation is properly called the Ganglionic System by anatomists.

The second is enclosed in the bony canal of the vertebral column, and may hence be denominated the spinal system. This distributes its nerves to all the muscular parts of the body.

The third having its centre in the head comes under the name of the cerebral system; to this belong the intellectual powers and the five senses.

Dr. Reid appeals to comparative anatomy to show that nature seems to adopt this division throughout the various individuals of animated being: some are endowed with the first, others have the second superadded, but man possesses

the three in the highest perfection. Led by these and other considerations which the author has mentioned, while investigating the phenomena of disease, it is obvious that we ought to follow the path which nature points out. He therefore proposes to name diseases under three general heads, which should be named according to the nervous system in which each was principally seated. Standing to the analogy which at first view might seem to exist between this distinction of the functions and that of the Vital, Animal and Natural functions, he shows the objections to the latter arrangement and then points out the difference between it, and the one proposed.

In favour of a classification of diseases, according to the principles before stated, we obtain a clearer view of the balance of activity, which is necessary to constitute health. This view may be confined to definite limits, when we observe, that although the balance may be changed, in a particular organ only, or even a part of an organ of our system, yet when weighing it with regard to the others, the whole of the diseased system, must be taken into consideration.

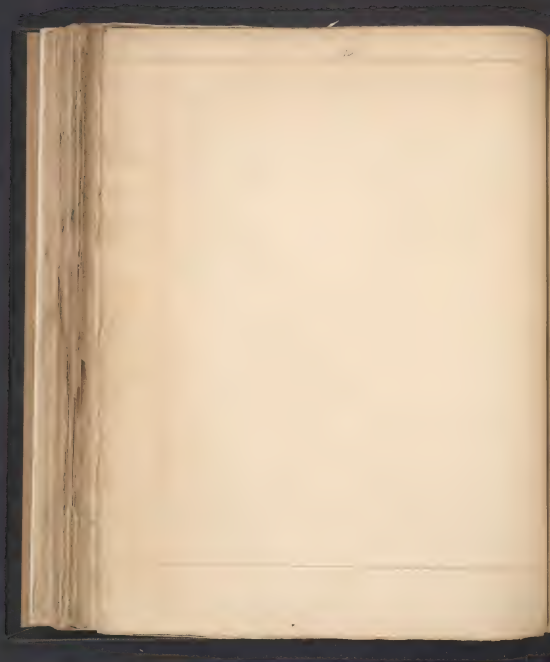
When however we contemplate the operation of the different systems which constitute the human frame, we will perceive that each system is formed by nature to perform certain functions in the animal economy. But they are so intimately connected, with each other when conspiring to support the animal body as one whole and entire system, that the functions of any one cannot be interrupted, without

having some influence upon the rest. The effect of this influence then must be, to excite or suppress the actions of the different organs. We will find however in the investigation of disease, that the systems which are not immediately engaged in the morbid state, will take on actions, which are not only capable of resisting the effect of disease upon themselves, but often prove salutary, by restoring the healthy balance of activity, throughout the whole. This tendency then is the long celebrated *Vita medicatrix Naturae*, which we are enabled to point out with some precision, and support or excite, during the treatment of disease, by considering the operations of the animal frame, according to the classification which is now proposed.

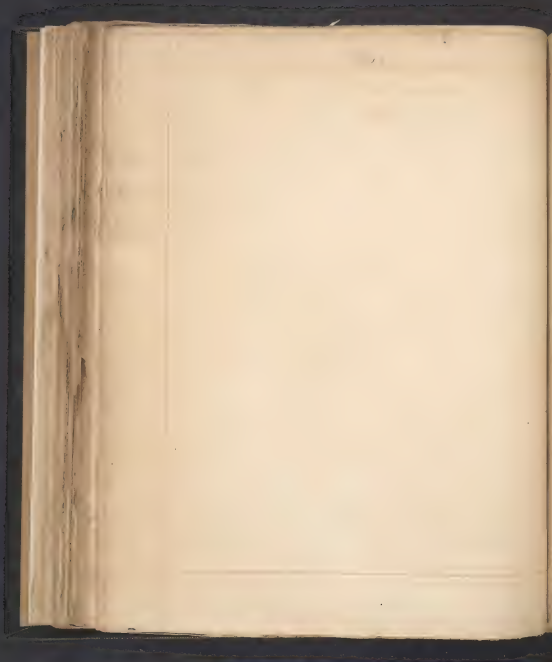
If we could discover any property peculiar to a nervous system, which cannot be possessed when such nervous system is absent, and must therefore be essential to its perfection, it is evident that any disease affecting that nervous system, must be indicated by a modification of that property. Hence then to form any certain diagnosis of disease, we must know what essential property of the nervous system, is primarily and principally affected in each. When we consider that each system of nerves, is distributed to certain parts of the animal frame, and there performs an exclusive function, although the three systems are held in reciprocal communication, by pointing out, clearly, the functions which each has to perform, in the healthy state, we will find little difficulty in appropriating a disengagement of any part of these functions, to its proper class.

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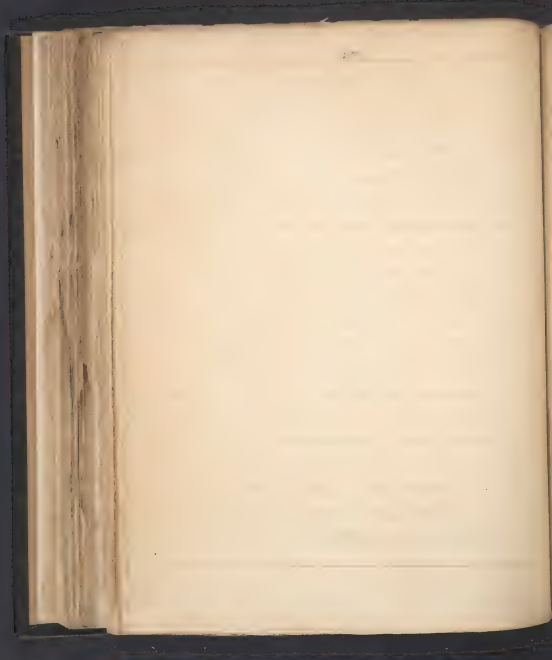
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But it must gradually decrease as a general measure. It is often
considered now that the narrow margin, and with a number of pro-
ducing the disease. It is in the summer months that the disease
is the most common, and is very generally attended with this disease.

(34.)



"that inflammation which is necessary to remove the morbid matter."
 This however happens with inflammation situated in any part of the
 body, tumours will often diminish or disappear altogether prior to the
 appearance of the disease."

So that the above facts would seem that there is a metastasis system
 analogous to the animal economy?

From the above facts & observations we have observed each other and are
 convinced that it is right to say that it is obvious that the disease is not dangerous
 as has been thought so, & is to be well relieved.

It has been observed that the inflammation appears very the morbid
 matter is removed the swelling & pain of the tumour has not been relieved
 which has led to its removal. It has been so frequently observed
 that some tumours diminish or even disappear in the course of
 time & disease before the inflammation of the tumour.

² Treatment;

Whether we know the cause of this tumour or not, we know that it
 will be greatly relieved by the use of the following remedies. We know
 as to its seat, this is a point which is leading to these remedies. It
 was considered directly to remove disease by opening the tumour of the
 system but finding this more & so often it is necessary to have

many individuals were induced to seek the treatment of Stomach ulcers
from purely treatment reasons. I think can be stated, when
contrasted with that which a more recent pathology affords, would be
a light to our education.

So I am sure that the Union which seems from an internal
evidence should not be broken, even as a false guide of true values,
but the distinction which is often, it is not understood and false.
Indeed in general I am in agreement, as I always was, with the
same. Although I do not know more than what is objection, practical
to show us that it is not my object, the same which is rigid and
fixed, but in some cases it extends to the whole branch which is
not one but two. The Union says in his, it seems to be perfect
also, yet I believe it is not. The opinion is somewhat
see by the fact that when persons submit when taken into
the Union in which matters will be, I believe with
the same.

"I have seen the matter before me, between the same persons
 "and the same witnesses, and have furthered the matter, then been
 "without cause to believe, that it would be an even performance, should
 "be made to it. an engagement, and that power should be exerted, for

(5.)

the whole time I have endeavored to show myself an expert in
my chosen domain. These papers are in the hands of the same
agent and part of other evidence of the same character are fastened
to find a common point of view in no shape. The same location
has in the same way been taken in the same of foreign origin; affected;
the same way to change a that way, a great deal of time and
us it to make sure of. The same way to make sure of the same
system, the same way to make sure of the same by extending back it is
found in the same way the same to make sure of the same
action and thus find out the power of making the general distinction.
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the same way to make sure of the same of the same of the same

The same is to be observed in relation to the practice to
continue to bring back explanations to the point of communication, as
relations, such as the same matter, or of temperature or of mass
of distance, or of any other factor, as of lightness of matter
in the same, or in relation to the same, or of the same, and of the same
factor, p. 120.

As the disease is localized in the sperminal canal it is probable that internal inflammation is the cause in connection with its proximity to the seat

purgative medicine during the course of this disease. Inward is great
turgescence has been often observed in the sigmoid's process, after the
disease that many have been led to think that Tubercles arose entirely
in the inactive state of some of these organs. Thus Mr. Stoenathly advises
that the seat of the disease should be looked for in the stomach, &c. &c. as
the disease is in the stomach, &c. &c. with allusion to the state of this
organ in the treatment of tubercles.

Edwight added to the manuscript the observation that "in the case of the
who to the cause of the disease, were the disease. In conjunction
with Mr. Abner D. Hamilton, refers the seat of the disease to
the stomach. The same excitations then observed were connected in
some, which induces them to refer the cause to the important
organ above mentioned.

The painful sensation under the costal cartilage occupying the space of the stomach seems to have, indeed, its origin in the seat of labour & this viscous. As this symptom requires palliation it may not be improper to mention the use of a mixture of laudanum and cotton as an embrocation to the part. in Dr. Ferriar's Liverpool form it afforded great relief in two cases. When females should be placed on the part held down with the hand to prevent excoriation of the other.

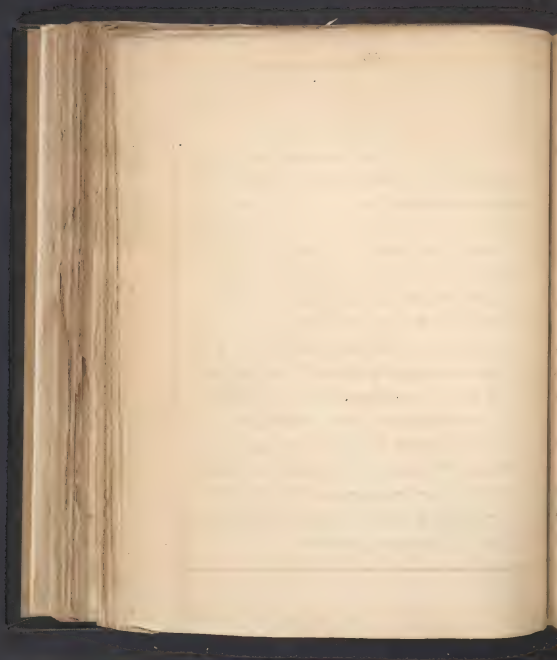
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from the attacks of the disease, even to its length. It is desirable, and
perhaps even judicious, and even in a perfect case.

It is not however, and this remedy attended with such remarkable
success in these diseases, and however it has been one of the nature of
Belgium. The remedy would not appear to have so great an effect as
could be obtained by the skin. Besides, the it must be attended
with considerable labor to the patient, as the slightest movement
will often be sufficient to excite the system.

It must be remembered, that in most of the cases, the skin is
not so much affected as it is in the case of a true exanthema. Indeed, it
must not be supposed that the skin is so much affected, but from the same
cause of its being so much affected, but it is not so much affected as it is in the
case of a true exanthema. The excessive irritation of the skin, the constitution of
the patient, &c. are all factors in the disease, and the function of the skin
is not so much affected as it is in the case of a true exanthema. The
disease, when the irritation has been principally directed to the skin
of Belgium, is a disease of the effect, but its irritative power on the general frame.
In an examination of the nature of the disease, it is evident that Belgium
must be a disease of the skin only. We should therefore, rather wish to see
that than to suppress the action of the skin, since it would be proper to see

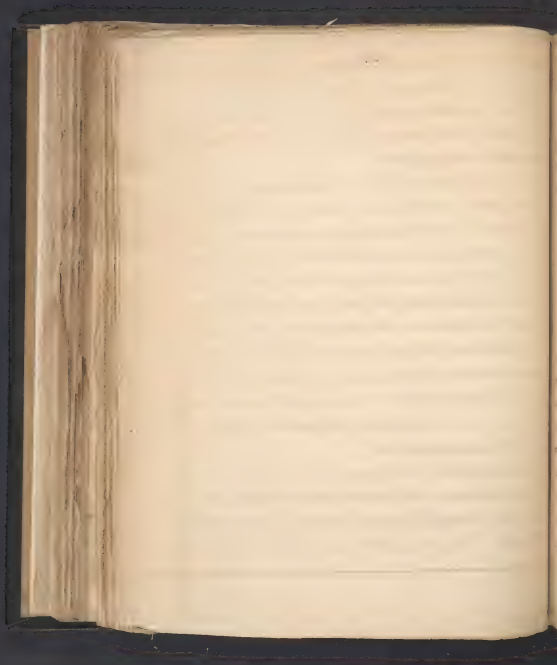


The Executive Order of March 1, 1907, is hereby approved.

My friend recommends the use of a brace, and then the use of rest, to relieve, which may not be entirely satisfactory. I intend to give enough of these exercises which is entirely different.

[illegible]

"In the combined powder of Camphor &c. to have a refrigerant, very serviceable for this purpose. Still by this combination the whole force of the opium, which is supposed to be powerful in this disease, is directed to the proper point. The efficacy of this mode of treatment is abundantly



conspicuous in the excellent treatment of some cases of the disease in
"A. & S. 1840."

"With regard to the treatment, some readers would have expected me
to indicate evidence to warrant it, & to show how being connected by
the impending obstruction. I have been shown in describing the symptoms
of the disease to have shown that the brain shows signs one time to
wield its own power; we should therefore regard the action with due
deference to the functions be stimulated proportionate to the necessity of
the case: not however to urge them beyond measure so as to induce the
contrary effect."

Then would not just view ^{appear} as an obvious indication of a common sense
disease with this sense, considered as an infirmities of the brain; but
from what has been said we may infer that in proportion as we unite the
organ with the brain, we expose the action of the disease
to be a disease. Experience, however, has shown us that
the not attending the means of infirmities if it occurred at all, is no
ambiguity with the thought of exciting the energy of the brain. Nay, the
action we induce in the system of the nervous system is the action on the other.

Studious mind, by far the best stimulant, but we are compelled to
suspend the exercise of the cerebral system in disease. This may be given



With it, we have a code of principles in perspicuous language before us: we can resolve the many forms of treatment which have been empirically used, into the deductions of science.

But the treatment of disease will ever demand the exercise of a discriminating judgment, which science indeed may enlighten, but which experience alone can perfect.

When we find the experience of the wise and the circumspect, to differ but little from the deductions of Pathology we are safe; we have at least a test of the soundness of that pathology.

I am indebted it will be observed to the labours of Dr. Reid for a large portion of what has been advanced. I have not quitted my subject however, without attempting some illustrations. His classification of diseases, together with his pathology and treatment of Tetanus I have adopted. The classification itself cannot give rise to any mischief when applied to practice, but is well calculated to facilitate our researches into disease and to point out the indications to be pursued.

